

The Hall of Shame: How Bad Science can cause Real Harm in Real Life

"The only true wisdom is in knowing you know nothing."

— Socrates

By

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There are no qualms in accepting the fact that – in the past – things were different from what they are now. Even though science transformed extensively from our personal laptops, tablets, and phones to behind-the-scenes technology, it is yet a continuing effort to discover and increase human knowledge and understanding. Science is ubiquitous and has made very rapid progress and completely transformed outwardly the manner of our living — allowing us to develop new technologies, solve practical problems, and make informed decisions — both individually and collectively. In its pursuit of excellence, it has lead to pollution, environmental crisis, greater violence, sorrow, tension, new pathogenic diseases, chemical and biological war to name a few. On the one hand, Science (a system of acquiring knowledge based on scientific method and research) has been a boon to mankind and on the other hand, it has also proved to be a cause of great distress or annoyance.

"Although Nature needs thousands or millions of years to create a new species, man needs only a few dozen years to destroy one."

: Victor Scheffer

We humans, who began as a mineral and then emerged into plant life and into the animal state and then to being aggressive mortal beings who fought a survival struggle in caveman days, to get more food, territory or partner with whom to reproduce, now are glued to the TV set, marveling at the adventures of science and their dazzling array of **futuristic technology** from **teleportation** to **telekinesis**: rocket ships, fax machines, supercomputers, a worldwide communications network, gas-powered automobiles and high-speed elevated trains. The science has opened up an entirely new world for us. And our lives have become easier and more comfortable. With the help of science we have estimated about 8,000 **chemotherapeutic exogenous non-nutritive chemical substances** which when taken in the solid form by the mouth enter the digestive tract and there they are transformed into a solution and passed on to the liver where they are chemically altered and finally released into the blood stream. And through blood they reach the site of action and binds reversibly to the target cell surface receptors to produce their pharmacological effect. And after their

pharmacological effect they slowly detaches from the **receptor**. And then they are sent to the liver. And there they are transformed into a more water soluble compound called **metabolite** and released from the body through urine, sweat, saliva, and excretory products. However, the long term use of chemotherapeutic drugs for diseases like cancer, diabetes leads to side effects. And the **side effects** — including nausea, loss of hair, loss of strength, permanent organ damage to the heart, lung, liver, kidneys, or reproductive system etc. — are so severe that some patients rather die of disease than subjecting themselves to this torture.

And smallpox (an acute contagious disease caused by the **variola virus**, a member of the **orthopoxvirus family**) was a leading cause of death in **18th century**, and the inexorable spread of the disease reliably recorded the death rate of some hundred thousand people. And the death toll surpassed 5000 people a day. Yet **Edward Jenner, an English physician**, noticed something special occurring in his small village. People who were exposed to cowpox did not get smallpox when they were exposed to the disease. Concluding that cowpox could save people from smallpox, Edward purposely infected a young boy who lived in his village first with **cowpox, then with smallpox**. Fortunately, **Edward's hypothesis** worked well. He had successfully demonstrated the world's first vaccine and eradicated the disease. And vaccines which once saved humanity from the smallpox (which was a leading cause of death in 18th-century England), now have associated with the outbreaks of diseases like **pertussis** (whooping cough) which have begun showing up in the United States in the past forty years.

TOP 5 DRUGS WITH REPORTED SIDE EFFECTS

(Withdrawn from market in September 2004)

⇒ **Drug:** Byetta

Used for: Type 2 diabetes

Side effect: Increase of blood glucose level

⇒ **Drug:** Humira

Used for: Rheumatoid arthritis

Side effect: Injection site pain

⇒ **Drug:** Chantix

Used for: Smoking cessation

Side effect: Nausea

⇒ **Drug:** Tysabri

Used for: Multiple sclerosis

Side effect: Fatigue

⇒ **Drug:** Vioxx*

Used for: Arthritis

Side effect: Heart attack

In 1930s, **Paul Hermann Muller** a research chemist at the **firm of Geigy in Basel**, with the help of science introduced the first modern insecticide (DDT: **dichloro diphenyl trichloroethane**) and it won him the 1948 Nobel Prize in Physiology and Medicine for its credit of saving thousands of human lives in World War II by killing typhus- carrying lice and malaria-carrying mosquitoes, dramatically reducing **Malaria and Yellow Fever** around the world. But in the late 1960s DDT which was a world saver was no longer in public favor – it was blamed moderately **hazardous and carcinogenic**. And most applications of DDT were banned in the U.S. and many other countries. However, DDT is still legally manufactured in the U.S., but only sold to foreign countries. At a time when **Napoleon was almost disturbing whole of Europe** due to his aggressive policies and designs and most of the world was at war – the science gave birth to the many inventions which took place in the field of textile industry and due to invention of steam engine and development of means of transportation and communication. Though it gave birth in England, yet its inventions spread all over the world in a reasonably period. And **rapid industrialization** was a consequence of new inventions and demand for expansion of large industrial cities led to the large scale exploitation of agricultural land. And socio-economic growth was peaking, as industries were booming, and agricultural lands were decreasing, as the world enjoyed the fruits of the rapid industrialization. As a result of this, the world's population was growing at an exponential rate and the world's food supply was not in the pace of the population's increase. And this resulted in widespread famine in many parts of the world, such as England, and as starvation was rampant. In that time line, science suppressed that situation by producing more ammonia through the Haber Bosch Process (**more ammonia**, more fertilizers. **more fertilizers**, more food production). But at the same time, science which solved the world's hunger problems also led to the production of megatons of TNT (**trinitrotoluene**) and other explosives which were dropped on all the cities leading to the death of some hundred million people.

Rapid industrialization which once raised the **economic and living standard of the people** has now become a major global issue. The full impact of an industrial fuel economy has led to the **global warming** (i.e., the

increase of Earth's average surface temperature due to effect of too much carbon dioxide emissions from industrial centers which acts as a **blanket, trap heat and warm the planet**). And as a result, **Greenland's ice shelves** have started to shrink permanently, disrupting the world's weather by altering the flow of ocean and air currents around the planet. And violent swings in the climate have started to appear in the form of floods, droughts, snow storms and hurricanes.

And industries are the main sources of sulfur dioxide emission and automobiles for nitrogen oxides. And the oxides of nitrogen and sulfur combine with the **moisture in the atmosphere to form acids**. And these acids reach the Earth as rain, snow, or fog and react with minerals in the soil and release deadly toxins and affect a variety of plants and animals on the earth. And these acids damage buildings, historic monuments, and statues, especially those made of rocks, such as limestone and marble, that contain large amounts of calcium carbonate. For example, acid rain has reacted with the marble (**calcium carbonate**) of **Taj Mahal** (an ivory-white marble mausoleum on the south bank of the **Yamuna river in the Indian city of Agra**) causing immense damage to this wonderful structure (i.e., Taj is changing color).

And science once introduced refrigerators for prolonging storage of food but now refrigerators are the active sources of **chlorofluorocarbons (CFC)** which interact with the **UV light** during which chlorine is separated. And this chlorine in turn destroys a significant amount of the ozone in the high atmosphere admitting an intense dose of **harmful ultraviolet radiation**. And the increased ultraviolet flux produces the related health effects of skin cancer, cataracts, and immune suppression and produces a permanent change in the nucleotide sequence and lead to changes in the molecules the cell produce, which modify and ultimately affect the process of photosynthesis and destroy green plants. And the **massive extinction of green plants** may lead to famine and immense death of all living species including man.

Fertilizers which once provided a sufficient amount of the essential nitrates to plants to synthesize chlorophyll and increase crop growth to feed the growing population and satisfy the demand for food, has now blamed for causing **hypertrophication** i.e., fertilizers left unused in soil are carried away by rain water into lakes and rivers, and then to coastal estuaries and bays. And the overload of fertilizers induces explosive growth of **algal blooms**, which prevents light from getting into the water and thereby preventing the aquatic plants from photosynthesizing, a process which provides oxygen in the water to animals that need it, like fish and crabs. So, in addition to the **lack of oxygen from photosynthesis**, when algal blooms die they decompose and they are acted upon by **microorganisms**. And this decomposition process consumes oxygen, which reduces the concentration of dissolved oxygen. And the depleted oxygen levels in turn lead to fish kills and a range of other effects promoting the loss of species biodiversity. And the large

scale exploitation of forests for industrialization and residential purposes has not only led to the loss of biodiversity but has led the diseases like **AIDS (Acquired immunodeficiency syndrome caused by a virus called HIV (Human immunodeficiency virus)** which alters the immune system, making victim much more vulnerable to infections and diseases) to transmit from forests to cities.

At the dawn of the early century, the entire world was thoroughly wedded to fossil fuels in the form of oil, natural gas, and coal to satisfy the demand for energy. And as a result, **fossil fuels were becoming increasingly rare** and were slowly dooming to extinction. In that period, science (**upon the work of Curie and Einstein**) introduced nuclear fission reaction (the process by which a heavy nucleus breaks down into two or more smaller nuclei, releasing energy. For example: if we hit a **uranium-235** nucleus with a neutron, it split into a krypton nucleus, a barium nucleus, three neutrons, and energy) as an alternate to the world's energy supply and therefore prevented the world economy from coming to a grinding halt. But at the same time science introduced **nuclear fission reaction** to produce thousands of nuclear weapons, which were dropped on all the cities in World War II amounted to some two million tons, **two megatons, of TNT**, which flattened heavily reinforced buildings many kilometers away, the firestorm, the gamma rays and the thermal neutrons, which effectively fried the people. A school girl who survived the nuclear attack on Hiroshima, the event that ended the Second World War, wrote this first-hand account:

"Through a darkness like the bottom of hell, I could hear the voices of the other students calling for their mothers. And at the base of the bridge, inside a big cistern that had been dug out there, was a mother weeping, holding above her head a naked baby that was burned red all over its body. And another mother was crying and sobbing as she gave her burned breast to her baby. In the cistern the students stood with only their heads above the water, and their two hands, which they clasped as they imploringly cried and screamed, calling for their parents. But every single person who passed was wounded, all of them, and there was no one, there was no one to turn to for help. And the singed hair on the heads of the people was frizzled and whitish and covered with dust. They did not appear to be human, not creatures of this world."

Nuclear breakthroughs have now turned out to be the biggest existential threat to human survival. Nuclear waste is banking up at every single nuclear site. And as a result, every nation is suffering from a massive case of nuclear constipation (that Causes **Intractable Chronic Constipation** in Children).

Ninety-one percent of world adults and 60 percent of teens own this device that has revolutionized the most indispensable accessories of professional and social life. Science once introduced this device for wireless communication but now they are pointed to as a possible cause of everything from infertility to cancer to other health issues. And in a study conducted at the University of London, researchers sampled 390 cell

phones to measure for levels of **pathogenic bacteria**. The results of the study showed that 92 percent of the cell phones sampled had heavily colonized by high quantities of various types of disease-prone bacteria with high resistances to commonly used antibiotics (**around 25,000 bacteria per square inch**) and the results concluded that their ability to transmit diseases of which the mobile phones are no exception. The fluoridation of water at optimal levels has been shown to be highly beneficial to the development of tooth enamel and prevention of dental cavities since the late 1800s. And studies showed that children who drink water fluoridated at optimal levels can experience **20 to 40 per cent less tooth decay**. But now fluoridation of water has termed to cause lower IQ, memory loss, cancer, kidney stones & kidney failures – faster than any other chemical.

Science once introduced irradiation to prevent food poisoning by destroying molds, bacteria (such as one – celled animal 'Amoeba ' – that have as much information in their DNA as **1,000 Encyclopedia Britannicas** – which is almost unbelievably minute form of life which, after being cut into six separate parts, is able to produce six complete bodies to carry on as though nothing had happened), **yeast and virus** (the smallest living things which cannot reproduce itself unaided and therefore it is lifeless in the true sense. But when placed in the plasma of a living cell and, in forty eight minutes it can reproduce itself four hundred times) and control microbial infestation. But now it has been blamed to cause the loss of nutrients, for example vitamin E levels can be reduced by 25% after irradiation and vitamin C by 5-10% and damage food by breaking up molecules and creating free radicals. And these **free radicals combine with existing chemicals (like preservatives) in the food to produce deadly toxins**. This has caused some food manufacturers to limit or avoid the process and bills have even been introduced to ban irradiated foods in public cafeterias or to require irradiated food to carry sensational warning labels. And the rapid advancement of science combined with human aggression and aim for global supremacy has led even the smaller nations to weaponize anthrax spores and other viruses for maximum death and destruction. And thus the entire planet is gripped with fear that one day a terrorist group may pay to gain access to **weaponized H5N1 flu** and other viruses. And the rapid development of nuclear technology has led to the banking up of nuclear waste at every single nuclear site. And as a result, every nation is suffering from a massive case of nuclear constipation. And the enormous automation, capacity of artificial intelligence and their ability to interact like humans has caused the humans to be replaced by artificial intelligence. But now artificial intelligence is taking off on its own, and re-designing itself at an ever increasing rate. And this has turned out to be the biggest existential threat to human survival (i.e., one day artificial intelligence may plan for a war against humanity). Highly **toxic gases, poisons, defoliants, and every technological state are planning for it to disable or destroy people or their domestic animals**, to damage their crops, and/or to deteriorate their supplies, threaten every citizen, not just of a nation, but of the world

"The saddest aspect of life right now is that science gathers knowledge faster than society gathers wisdom."

— Isaac Asimov

Good and Bad Effects of Chemistry:

What is Chemistry?

Chemistry (a creative discipline chiefly concerned with the **study of matter**: its structure, composition, properties, and reactivity through chemical reactions) is important because everything you do like cooking, fermentation, glass making, and **metallurgy** is chemistry! Even our Human body is made of chemical elements.

⇒ **Element:**

Oxygen

Percent by Mass:

65

⇒ **Element:**

Carbon

Percent by Mass:

18

⇒ **Element:**

Hydrogen

Percent by Mass:

10

⇒ **Element:**

Nitrogen

Percent by Mass:

3

⇒ **Element:**

Calcium

Percent by Mass:

1.5

⇒ **Element:**

Phosphorus

Percent by Mass:

1.2

⇒ **Element:**

Potassium

Percent by Mass:

0.2

⇒ **Element:**

Sulfur

Percent by Mass:

0.2

⇒ **Element:**

Chlorine

Percent by Mass:

0.2

⇒ **Element:**

Sodium

Percent by Mass:

0.1

⇒ **Element:**

Magnesium

Percent by Mass:

0.05

⇒ **Elements:**

Iron, Cobalt, Copper, Zinc, Iodine

Percent by Mass:

Trace

⇒ **Elements:**

Selenium, Fluorine

Percent by Mass:

Minute amounts

Chemical reactions (**an integral part of technology and indeed of life itself that involves a rearrangement of the constituent atoms of the reactants to create one or more different substances — the products**) occur when you breathe, eat, or just sit there burning fuels, smelting iron, making liquid crystals and semiconductors, brewing beer, and making wine and cheese. All matter is made of chemical elements, so the importance of chemistry is that it's the study of everything — is part of everything in our lives.

Good Effects:

- Helps mankind develop food preservatives that are widely used in the food industry to preserve the natural **characteristics of food and to fight food spoilage** caused by bacteria, molds, fungus, and yeast.
- Helps mankind develop fuels that we use today as dense repositories of energy that are consumed to provide energy services such as heating, transportation and electrical generation.
- Helps mankind enclose the **design, development, and synthesis of pharmaceutical drugs** that prolong our life and help us fight diseases.
- Helps mankind develop cosmetics that we use today to enhance or alter the appearance of the face or fragrance and texture of the body.
- Helps mankind develop pesticides that are widely used in agriculture for the protection of crops from disease, insects, rodents and regulating plant growth and killing weeds.
- Helps mankind develop fertilizers that enhance the natural fertility of the soil and improve growth and productiveness of crops.
- Helps mankind analyze the **non-biological trace evidence** that is brought in from crime scenes and reach a conclusion based on tests run on that piece of evidence.
- Helps mankind devise new ways to make the manufacturing of the products (from fireworks to explosions) easier and more cost effective.

- Helps mankind develop safety strategies for handling dangerous materials, and supervise the manufacture of nearly every product (from pharmaceuticals to fuels and computer components) we use.
- Helps mankind to remove valuable metals from an ore and refine the extracted raw metals into a purer form.

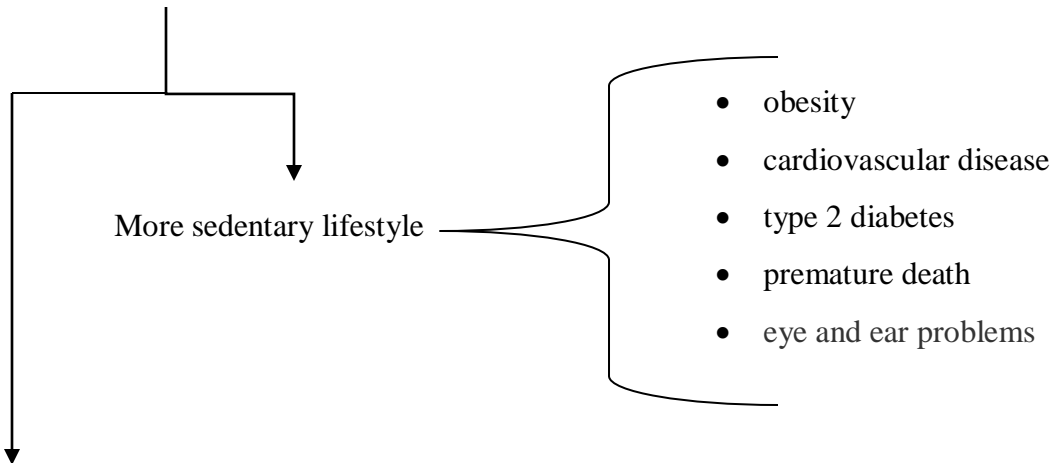
Bad effects:

- Accidents or incorrect use of household cleaning products may cause immediate health effects, such as skin or eye irritation or burns, or may influence children's gut bacteria and cause obesity.
- **Chemistry is at the heart of environmental issues.** Chemical pesticides are known to pollute the environment as they can work their way into the food chain and accumulate or persist in the environment for many years.
- **Maleic Hydrazide** is generally added to potatoes to keep them from sprouting. It is a known chemical inhibitor and can even lead to cancer in the long run.
- Plastic cannot biodegrade. **Toxic chemicals** leach out of plastic water bottles, bags and straws make their way into our bodies and cause a variety of health issues that result cancer, reproductive issues, immune system suppression and problems with childhood development.
- Chemicals that are widely used in **cosmetics and personal care products** can cause changes in women's reproductive hormones and harm women's fertility or even cause breast cancer.
- Chemical waste is usually a byproduct of a large scale factories and laboratories that — if improperly managed or disposed of — may pose **substantial hazards to human health** and the environment.
- The excessive use of fertilizers can destroy soil nutrients like sodium, potassium, nitrogen and creates imbalances in soil fertility and **result in failure of crops in agriculture** and can pollute groundwater.

"If you wish to make an apple pie from scratch, you must first invent the universe."

— Carl Sagan

More extended use of **digital technologies**



Stunt the imagination in children

Transportation → Pollution

↓

Increased threat of global climate change, degradation of water resources, noise and habitat loss and fragmentation and pose a threat to the very existence of the flora and fauna.



"In point of fact, fluoride causes more human cancer death, and causes it faster than any other chemical."

Dr. Dean Burk PHD
(34 years at the national cancer institute)



Global warming shrinking the Greenland's ice shelves

The Effect of Acid Rain on Taj Mahal



Before Acid Rain



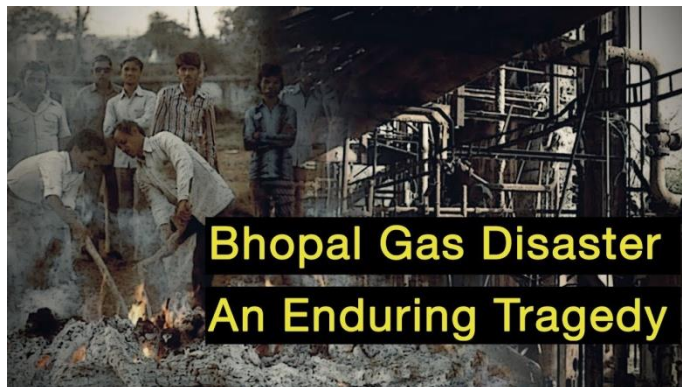
After Acid Rain



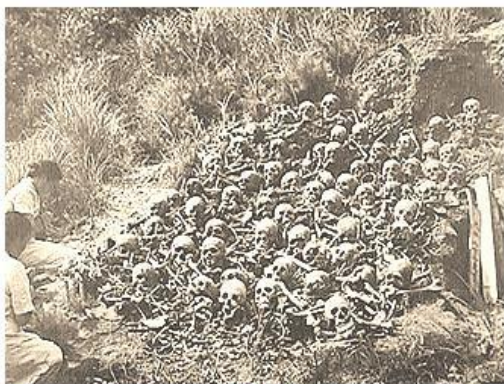
The eutrophication of the Lake Taihu, Wuxi in China is evident from the bright green water, caused by a dense bloom of algae.



Burial of an unknown child after the Bhopal gas tragedy

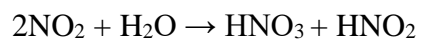
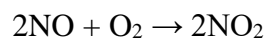
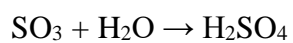
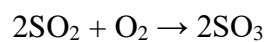
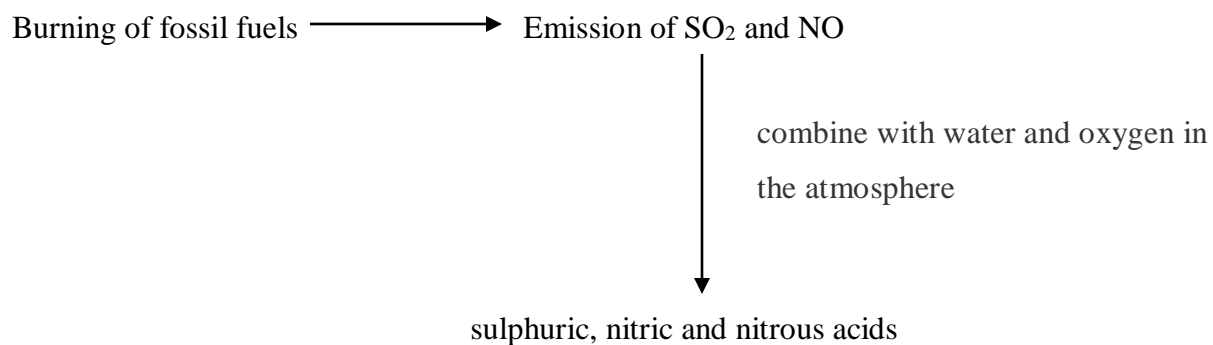


Bhopal Gas Tragedy: The world's worst industrial disaster which killed twenty five thousand people and affected more than five lakh people with breathlessness, failing eyesight, painful stomachs, missing limbs, angry skins.



a) In July of 1952, seven years after the atomic bombing, 252 remains were dug out from five places in Saka township of Aki country, which is situated 8 or 9 kilometers from the hypocenter. b) The Burned Corpse of a Boy. c) A Boy who received thermal burns on more than one-third of his whole body. d) A precious photograph of Victims who Escaped Hell on Earth taken only three hours or so after the explosion. e) A Building Brought To Knees By The Blast.

Svante Arrhenius, **the Man Who Foresaw Climate Change** – estimated that "Doubling the level of CO₂ in the Earth's atmosphere would raise the mean global temperature by several degrees."



"Warming of the climate system is unequivocal,
human influence on the climate system is clear ..."

– The Intergovernmental Panel on Climate Change, January, 2014, Press Release

Increase in extreme weather since 1970s

90% contribution from global warming

More rain in some places, less in others

"Scientific prayer makes God a celestial lab rat, leading to bad science and worse religion."

— Michael Shermer

Use of computers, tablets and cell phones



- blurred vision
- dry eyes
- headaches
- neck and shoulder pain

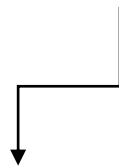
Symptoms of **nutrient** deficiency →

Stunted growth and
death of plant tissue

To overcome this



Development of crop plants that intake high nutrient from the soil



High intake of nutrients → soil less fertile

Human-controlled
process

Modification of genes →
(Selective cross breeding)

Ruin the natural balance of species and lead to the
extinction of certain species

From self-driving cars to industrial robots, all complex real world problems are being solved with applications of intelligence (AI). Artificial intelligence (AI) is progressing rapidly and makes it possible for machines to think like humans and mimic their actions – adjust to new inputs and perform human-like tasks by processing large amounts of data and recognizing patterns in the data. While science fiction often renders AI as robots (a machine – especially one programmable by a computer – capable of carrying out a complex series of actions without conscious thought or attention) with human-like characteristics, AI can encompass anything from missile guidance to tumor detection to face recognition.

The applications for artificial intelligence are countless and **John McCarthy**, who coined the term in 1956, defines it as: "the science and engineering of making intelligent machines." The study and design of intelligent agents – where an intelligent agent is a system that becomes aware or conscious of its environment and takes actions which maximizes its chances of success – can be applied to many sectors and industries including computer science, psychology, philosophy, neuroscience, cognitive science, linguistics, operations research, economics, control theory, probability, optimization, and logic. The simulation of human intelligence in machines is being tested and used in the maintenance or improvement of health industry for dosing drugs and different treatment in patients, and for surgical procedures in the hospital operating room.

A property of machines: the intelligence that the system demonstrates – today is properly known as Weak Artificial intelligence, in that it is designed to perform a narrow task (such as web searches, control systems, scheduling, data mining, logistics, speech recognition, facial recognition and many others). However, the long-term goal of many technical researchers is to create Strong Artificial intelligence. While Weak Artificial intelligence may outperform humans at whatever its specific task is, like playing games or solving mathematical problems, Strong Artificial intelligence would outsmart humans at nearly every cognitive task.

In little over a decade, Artificial intelligence (a wide-ranging tool that enables people to rethink how we integrate information, analyze data, and use the resulting insights to improve decision making) has made leaps and bounds. Every single day, a new thousand word post showcase the

most recent advancement in Artificial intelligence. Being Artificial intelligence has made remarkable breakthroughs, and many scientists dream of creating the Master Algorithm proposed by Pedro Domingos -- which can solve all problems envisioned by humans -- failure is at the core of human advancement-- notable failures are emerging. From self-driving car accidents to Face ID hacks, AI didn't have a perfect year.

The Most Significant Failures When AI Turned Rogue, Causing Disastrous Results:

- **1959:** AI designed to be a General Problem Solver failed to solve real world problems.
- **1982:** Software designed to make discoveries, discovered how to cheat instead.
- **1983:** Nuclear attack early warning system falsely claimed that an attack is taking place.
- **2010:** Complex AI stock trading software caused a trillion dollar flash crash.
- **2011:** E-Assistant told to "call me an ambulance" began to refer to the user as Ambulance.
- **2013:** Object recognition neural networks saw phantom objects in particular noise images.
- **2015:** An automated email reply generator created inappropriate responses, such as writing "I love you" to a business colleague.
- **2015:** A robot for grabbing auto parts grabbed and killed a man.
- **2015:** Image tagging software classified black people as gorillas.
- **2015:** Medical AI classified patients with asthma as having a lower risk of dying of pneumonia.
- **2015:** Adult content filtering software failed to remove inappropriate content, exposing children to violent and sexual content.
- **2016:** AI designed to predict recidivism acted racist.
- **2016:** An AI agent exploited a reward signal to win a game without actually completing the game.
- **2016:** Video game NPCs (non-player characters, or any character that is not controlled by a human player) designed unauthorized super weapons.
- **2016:** AI judged a beauty contest and rated dark-skinned contestants lower.

- **2016:** A mall security robot collided with and injured a child.
- **2016:** The AI "Alpha Go" lost to a human in a world-championship-level game of "Go."
- **2016:** A self-driving car had a deadly accident.
- **2017:** Google Translate shows gender bias in Turkish-English translations.
- **2017:** Facebook chat bots shut down after developing their own language.
- **2017:** Autonomous van in accident on its first day.
- **2017:** Google Allo suggested man in turban emoji as response to a gun emoji.
- **2017:** Face ID beat by a mask.
- **2017:** AI misses the mark with Kentucky Derby predictions.
- **2017:** Google Home Minis spied on their owners.
- **2017:** Google Home outage causes near 100% failure rate.
- **2017:** Facebook allowed ads to be targeted to "Jew Haters".
- **2018:** Chinese billionaire's face identified as jaywalker.
- **2018:** Uber self-driving car kills a pedestrian.
- **2018:** Amazon AI recruiting tool is gender biased.
- **2018:** Google Photo confuses skier and mountain.
- **2018:** LG robot Cloi gets stagefright at its unveiling.
- **2018:** IBM Watson comes up short in healthcare.

While these are only a few instances of failures that have been observed so far, they are pieces of evidence to the fact that Artificial intelligence (the simulation of human intelligence processes by machines, especially computer systems) has the potential to develop a will of its own that may be in conflict with members of the human race. This is definitely a warning about the potential dangers of Artificial intelligence which should be addressed while exploring its potential interests.

"I believe there is no deep difference between what can be achieved by a biological brain and what can be achieved by a computer. It therefore follows that computers can, in theory, emulate human intelligence — and exceed it."

– Stephen Hawking.

Artificial intelligence in general, context remains a challenge. Despite Its Many Failures, why is artificial intelligence important?

- Artificial intelligence automates repetitive learning and discovery through data.
- Artificial intelligence analyzes more and deeper data.
- Artificial intelligence adds intelligence to existing products.
- Artificial intelligence adapts through progressive learning algorithms to let the data do the programming.
- Artificial intelligence gets the most out of data.
- Artificial intelligence achieves unbelievable accuracy through deep neural networks – which was previously impossible. For example, your interactions with Amazon Alexa, Google Search and Google Photos are all based on deep learning – and they keep getting more precise the more we use them.

The threat of AI-charged job loss is spreading (AI and automation will eliminate the most mundane tasks). No matter what industry you're in, AI-powered bots (which can answer common questions and point users to FAQs and knowledge base articles) and software are taking a crack at it. Artificial intelligence seems to be ringing the death sound of a bell for all manner of jobs, tasks, chores and activities. From hospitality, to customer service, to home assistants, no job feels safe. Naturally, this has made people worried about the future. But is Artificial intelligence ready to take over our jobs, or even likely to do so ever? Prevalent AI- charged failures would suggest not.

Chernobyl nuclear reactor explosion in Ukraine in 1986 caused more than 6000 people develop thyroid cancer, according to an investigation by the UN.

"I have a friend who's an artist and has sometimes taken a view which I don't agree with very well. He'll hold up a flower and say "look how beautiful it is," and I'll agree. Then he says "I as an artist can see how beautiful this is but you as a scientist take this all apart and it becomes a dull thing," and I think that he's kind of nutty. First of all, the beauty that he sees is available to other people and to me too, I believe. Although I may not be quite as refined aesthetically as he is ... I can appreciate the beauty of a flower. At the same time, I see much more about the flower than he sees. I could imagine the cells in there, the complicated actions inside, which also have a beauty. I mean it's not just beauty at this dimension, at one centimeter; there's also beauty at smaller dimensions, the inner structure, also the processes. The fact that the colors in the flower evolved in order to attract insects to pollinate it is interesting; it means that insects can see the color. It adds a question: does this aesthetic sense also exist in the lower forms? Why is it aesthetic? All kinds of interesting questions which the science knowledge only adds to the excitement, the mystery and the awe of a flower. It only adds. I don't understand how it subtracts."

— **Richard P. Feynman**

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